Amendments to the Drawings

Please cancel Fig. 2 filed on June 25, 2007 and add Fig. 2 originally filed and attached herewith.

In Figs. 9(a) and 9(b), since these drawings do not show the prior art as explained in paragraph 0019 of the original specification, "Prior Art" in Figs. 9(a) and 9(b) is removed. Substitute sheet has been filed.

REMARKS

In the Final Action, claims 1 and 3-7 were rejected under 35 U.S.C. 112, second paragraph, as being incomplete, such omission amounting to a gap between the elements. Also, claims 1 and 3-7 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the Final Action, it was also indicated that claims 1 and 3-7 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP06102251A, Stevens(4,762,617), Windig (6,329,652), Watanabe (6,444,979), Sacks (5,205,845) and Bateman et al.

In response to the Final Action, claims 1 and 6 have been amended to clarify the feature of the invention. Claims 2-4 have been canceled. Claim 8 has been newly filed.

As for the rejection under 35 U.S.C. 112, second paragraph, it was indicated that the elements necessary to perform the various mass spectrometry conditions and obtaining of spectrum and chromatogram data are omitted.

In response to the rejection, claim 1 has been amended to clearly recite the necessary elements. That is, an operation portion is designed to set a plurality of spectrometry conditions for mass spectrum acquisition portion, and a control portion performs the mass spectrum acquisition.

With respect to the rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter as the invention, it was indicated that claim 1 should be corrected so as to clearly match up the recited setting device, spectrometry execution device, and operation device with those structures discussed and

shown in the specification. The newly amended claims 1 and 3-7 now clearly match up those structures in the specification.

In the action, it was also indicated that, in claim 1, it is unclear how the adding of data is being done and which data is added together. Newly amended claim 1 now clarifies that spectrum intensities in the plurality of spectrometry conditions are added together by a signal process portion 20.

As for an indication regarding where the chromatograph portion lies structurally in the device, it would be well known in the art that a typical chromatograph mass spectrometer is equipped with the pump 2, a sample introduction portion 3 and a column 4, as shown in Figs. 1 and 2.

In the invention, the control portion is connected to the mass spectrum acquisition portion for executing a cycle of the mass spectrum acquisition while changing the plurality of spectrometry conditions set by the operating portion. The control portion sequentially extracts the cycle of the mass spectrometry repeatedly. Also, the signal process portion adds spectrum intensities obtained in the plurality of spectrometry conditions whenever one cycle of the mass spectrometry is completed to obtain chromatogram data. The fraction collector collects the components based on the chromatogram data obtained by the signal process portion.

With respect to the rejection under 35 U.S.C. 103(a), JP teaches a liquid chromatograph coupled to a mass spectrometer with a controller for alternatively or, under program control, providing either positive or negative ion detection mode. Stevens teaches a chromatogram system with two detectors and a fraction collector (Fig.1).

In Stevens, chromatogram data obtained is added or subtracted

to scale the data. However, Steven is silent as to particular functions of the first and second flow cell monitors 32, 34. Stevens does not expressly or implicitly indicate that spectrum intensities obtained in the plurality of spectrometry conditions are added for obtaining chromatogram data, as in the invention.

In the invention, the fraction collector collects the components based on the chromatogram data obtained by the signal process portion. In Stevens, the fraction collector is disclosed, but it is simply connected to the monitor 1, monitor 2 to fraction collector. It is not disclosed or suggested that the chromatograms obtained in the two monitors are added, and that the components are collected based on the added chromatograms.

In the invention, the signal process portion adds spectrum intensities obtained in the plurality of spectrometry conditions whenever one cycle of the mass spectrometry is completed to obtain chromatogram data, and the fraction collector collects the components based on the chromatogram data obtained by the signal process portion. Stevens does not disclose or suggest the features of the invention.

Therefore, even if JP and Stevens are combined, claim 1 is not obvious from the cited references.

In Windig, in column 4, lines 1-19, it is taught that the sum of spectroscopic variables is plotted versus time to obtain the enhanced chromatogram.

Therefore, unlike the present invention, Windig does not either expressly or implicitly indicates that spectrum intensities obtained in the plurality of spectrometry conditions are added to obtain chromatograph data.

In Watanabe, a program generator 16 adds the detected data (ion intensities) obtained in the previous scanning cycles. A

combining unit 17 further combines the ion intensities, for the mass, contained in the all total ion intensities of the peaks of the program according to the processing sequence stored in the main controller 15. Then, the combining unit 17 calculates combined data of the ion intensities.

In Watanabe, there is no express or implicit indication that spectrum intensities obtained in the plurality of spectrometry conditions are added to obtain chromatograph data.

In Sacks, it is taught that a gas chromatography device has multiple separation columns, so that the outputs of the multiple columns can be combined or multiplexed to form a single chromatogram from Flame Ionization Detector 16, hereinafter FID 16, and the chromatographic time dimension can be used more efficiently.

AS is obvious from the structure of the device in Sacks, the present invention is significantly different from Sacks in terms of that Sacks includes multiple separation columns, compared to only one chromatograph portion in the present invention.

Furthermore, with respect to the fact that Sacks is provided with FID 16, it is widely known that a fraction collector is practically inapplicable to a gas chromatography with the FID. Therefore, there is no suggestion or motivation to combine the fraction collector and the FID.

In Bateman, as a liquid chromatograph mass spectrometer system, a tandem quadrupole time of flight (Q-TOF) mass spectrometer has been programmed such that phosphorylated peptides can automatically be discovered and identified.

In the action, it is indicated that even though Bateman does not disclose an operation device for adding data, it would have been obvious to modify Bateman to add the data from the

chromatograms in devices such as taught by Stevens, Windig, Watanabe or Sacks.

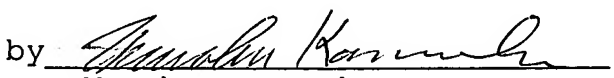
As stated above, JP, Bateman et al., Stevens, Windig, Watanabe and Sacks do not disclose that spectrum intensities obtained in the plurality of spectrometry conditions are added for each cycle of the mass spectrometry by a signal process portion to obtain chromatogram data.

Therefore, even thought such references are combined, it would not be obvious that spectrum intensities obtained in the plurality of spectrometry conditions are added for each cycle of the mass spectrometry by a signal process portion to obtain chromatogram data, as recited in claim 1 of the invention.

On the grounds stated above, it is respectfully stated that all rejections under 35 U.S.C. 103(a) are obviated. Claims pending in the application are patentable over the cited references.

Reconsideration and allowance are earnestly solicited.

Respectfully submitted,

by 

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